

What is claimed is:

1. A non-aqueous electrolyte secondary cell comprising a positive electrode intercalating and deintercalating lithium ions, a negative electrode intercalating and deintercalating lithium ions, and a non-aqueous electrolyte having a non-aqueous solvent and an electrolyte salt, wherein,
5 the non-aqueous electrolyte includes a vinylene carbonate derivative, a cyclic sulfite derivative, and a phenylcycloalkane derivative, or an alkylbenzene derivative having a quaternary carbon directly bonded to a benzene ring.
- 10 2. The non-aqueous electrolyte secondary cell according to claim 1, wherein:
a positive electrode active material contained in the positive electrode is a lithium cobalt compound oxide; and
the positive electrode active material has a bulk density of 3.3 g/cm³ or
15 more.
3. The non-aqueous electrolyte secondary cell according to claim 1, wherein:
when a total mass of the non-aqueous solvent and the electrolyte salt is taken as 100, an amount of the vinylene carbonate derivative is
20 0.5 to 3 parts by mass per 100 total mass of the non-aqueous solvent and the electrolyte salt; and
an amount of the cyclic sulfite derivative is 0.1 to 2 parts by mass per 100 total mass of the non-aqueous solvent and the electrolyte salt.

4. A non-aqueous electrolyte secondary cell comprising a positive electrode intercalating and deintercalating lithium ions, a negative electrode intercalating and deintercalating lithium ions, and a non-aqueous electrolyte having a non-aqueous solvent and an electrolyte salt, wherein,

5 the non-aqueous electrolyte includes a vinylene carbonate derivative, a cyclic sulfite derivative, a phenylcycloalkane derivative, and an alkylbenzene derivative having a quaternary carbon directly bonded to a benzene ring.

5. The non-aqueous electrolyte secondary cell according to claim 4,
10 wherein:

a positive electrode active material contained in the positive electrode is a lithium cobalt compound oxide; and
the positive electrode active material has a bulk density of 3.3 g/cm³ or more.

15 6. The non-aqueous electrolyte secondary cell according to claim 4, wherein:

when a total mass of the non-aqueous solvent and the electrolyte salt is taken as 100, an amount of the vinylene carbonate derivative is 0.5 to 3 parts by mass per 100 total mass of the non-aqueous
20 solvent and the electrolyte salt; and
an amount of the cyclic sulfite derivative is 0.1 to 2 parts by mass per 100 total mass of the non-aqueous solvent and the electrolyte salt.